Product Data Sheet

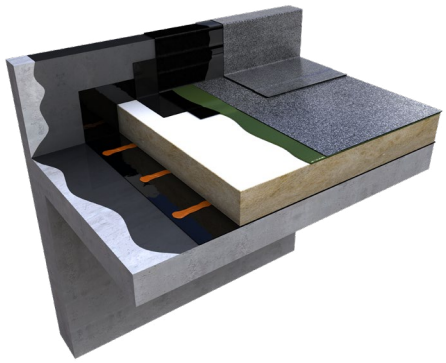
HYTHERM ADH

Insulation

Durable, lightweight PIR insulation for warm roofs (flat board or tapered)

Hytherm ADH PIR insulation is a rigid board used in warm roofs under fully adhered reinforced bituminous membranes, mastic asphalt and approved single ply waterproofing systems.

The board comprises a fibre-free, rigid polyisocyanurate (PIR) core with a coated glass tissue facing on both sides. Hytherm ADH is available in both flat and tapered boards, for use on new roofs, refurbished roofs or for upgrading the thermal performance of existing roofs.



Key benefits

- High thermal performance.
- Compatible with adhesively bonded single ply roofing membranes laid on mechanically fixed or adhered boards.
- An Environmental Product Declaration (EPD) is available for this product. Please contact Axter's Technical Department for further details.

Roof Design

Consideration should be given to the recommendations of BS 4841: Part 3 and those of the Single Ply Roofing Association.

Falls
The fall on a flat roof should be constant and steep enough to ensure that rainfall does not pond.

Fire Performance
The fire rating, when tested to EN13501-5 and BS 476 Part 3 'External Fire Exposure Roof Test', will be dependent upon waterproofing system specified.

Air and Vapour Control Layer
A continuous, Axter approved, air and vapour control layer (AVCL) must be used below the insulation. At vertical upstands and penetrations, the AVCL must be turned up and sealed to encapsulate the insulation layer prior to the roof finish being completed. (A comprehensive U-Value calculation and condensation risk analysis should be carried out for all projects).

Loadings
Hytherm ADH boards are suitable for use on flat roofs that are subject to maintenance traffic. Walkways should be provided on roofs requiring regular pedestrian access. When the roof is complete, protective boarding should be laid if additional site work is to be carried out.

Laying (Metal Deck)
The boards should be laid over the air and vapour control layer in a break bonded pattern. The long edges of the boards should be laid at right angles to the corrugations and all board joints must be fully supported by the deck.

Laying (Concrete Slab)
Slabs should be dry, and clean of debris, and laid to correct fall. The boards can be secured using Axter approved mechanical fixings and washers, with boards laid with a breakbonded pattern. Joints should be closely butted.

Alternatively, the boards can be adhered to the slab with Axter approved adhesive systems.

Partially Bonded Reinforced Bitumen Membrane Systems
Partially bonded built–up bitumen waterproofing should be laid, in accordance with BS 8217 (Reinforced bitumen membranes for roofing. Code of practice).

Fully Adhered Systems
The Hytherm ADH boards are suitable for use with Axter fully adhered waterproofing membranes. Board joints and abutments should be taped subject to the approved adhesive system being used.

Fixings
Depending on the fixings specification chosen, quantity and pattern of fixings will vary with the location, roof height/ width and topographical data. Architectural specification should be consulted.

Generally with 1200mm x 1200mm boards, a minimum of 6 fixings are adequate, located between 50mm and 150mm from all edges, additional fixings may be placed along the centre line. Additional fixings around roof perimeter may be required. Counter sunk washers, 50mm in diameter should be used with each fixing. However, BS 6399 Part 2 or BS EN 1991-1.4: 2005 + A1: 2010 (National Annex to Eurocode 1. Actions on structures. General Actions. Wind Actions) should always be consulted. During the construction process, the insulation should be protected from rain penetration during breaks in the process. It is recommended to seek advice from the fixing manufacturer for specific guidance.

DESCRIPTION	
Length (mm)	1200mm
Width (mm)	1200mm
Thickness (mm)	25, 50, 60, 70, 80, 90, 100, 110, 120, 130, 140, 150

PROPERTY & UNITS	
Density (Foam Core)	32kg/m^3
Compressive Strength	>150kPa@10% Compression
Thermal Conductivity	0.024 - 0.027W/mK
Reaction to Fire	Euroclass E

TYPICAL U-VALUES

Construction	Thickness (mm)	U-Value (W/m^{2}K)
Concrete deck[1]	150mm	0.15
Metal deck[2]	160mm	0.15
Timber deck[3]	150mm	0.15
Concrete deck[1]	125mm	0.18
Metal deck[2]	130mm	0.18
Timber deck[3]	120mm	0.18
Concrete deck[1]	120mm	0.19
Metal deck[2]	120mm	0.20
Timber deck[3]	110mm	0.19

1. 200mm concrete deck with suspended ceiling below.
2. 0.7mm metal deck with suspended ceiling below.
3. 18mm timber deck with joists and plasterboard below.

The given U-values are indicative only. The effect of fixings has been assumed to have had no effect on the U-Value. For comprehensive calculations on all deck types, please contact Axter's Technical Department..

*Thermal conductivity is dependent on facings and product thickness.

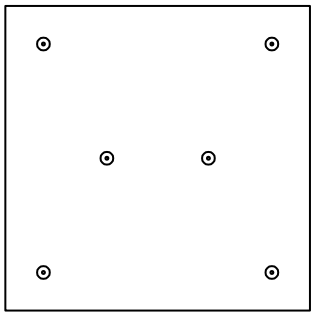
Recommended fixing patterns

For comprehensive guidance and details on fixing patterns, please refer to guidance from the following bodies.

- SPRA - Single Ply Roofing Association: Single Ply Design Guide.
- Insulation Manufacturers Association Information document ID/1/2009, published by IMA.
- LRWA - Liquid Roofing and waterproofing Association: Technical Guidance.

Distribute mechanical fixings evenly across the board, at a minimum of 50mm from the board edge and a maximum of 150mm. Refer to fixing patterns below for indicative purposes.

The required number of fixings shown is the minimum only. Regardless of the waterproofing system attachment method, wind load calculations should be undertaken in order to determine actual fixing requirements in corner, perimeter and field roof areas. These areas should be clearly defined, especially where different numbers of fixings are required for each zone.



6 fixings per board

Recommended fixing board patter for 6 fixings per board
(1200mm x 1200mm board - 4.17 fixings/m^2)

Handling, cutting and storage

Hytherm ADH insulation should be stored off the ground, on a clean, flat surface and must be stored under cover. The polythene wrapping is not considered adequate protection for outside exposure. Care should be taken to protect the insulation in storage and during the build process.

The insulation boards can be readily cut using a sharp knife or fine toothed saw. Ensure tight fitting of the insulation boards to achieve continuity of insulation as asked for within the ACDs. Appropriate PPE should be worn when handling insulation. Please refer to Safety Data Sheet on the Axter website.

The boards are wrapped in polythene packs and each pack is labelled with details of grade/type, size and number of pieces per pack.

Durability

Hytherm ADH Insulation is stable, rot resistant, provides no food value to vermin and will remain effective for the lifetime of the building, dependent on specification and installation. Care should be taken to avoid contact with acids, petrol, alkalis and mineral oil. When contact is made, clean materials in a safe manner before installation.